Problem 1. Use a K-map to simplify (all possible cases)

a. $F(A,B,C) = \sum(1,2,3,4,6,7)$
b. $F(A,B,C,D) = \sum(1,3,4,5,6,7,12,13)$
c. $F(A,B,C,D) = \sum(2,5,7,8,10,12,13,15)$
d. $F(A,B,C,D) = \sum(0,6,8,9,10,11,13,14,15)$
e. $F(A,B,C,D) = \sum(0,4,5,6,7,8,9,10,11,13,14,15)$
f. $F(D,C,B,A) = \sum(0,2,3,5,7,8,10,11,12,13,14,15)$
g. $F(D,C,B,A) = \sum(0,1,4,5,7,8,10,13,14,15)$
h. $F(D,C,B,A) = \sum(1,2,5,10,12) + \sum d(0,3,4,8,13,14,15)$

Problem 2. Use a K-map to simplify (all possible cases)

a. $F(A,B,C,D) = \sum m(0,1,2,5,7,8,10,14,15) + d(3,13)$
b. $F(A,B,C,D) = \prod M(1,3,4,5,11,12,14,15).D(0,6,7,8)$
c. $F(A,B,C,D) = \sum m(1,3,6,8,11,14) + d(2,4,5,13,15)$
d. $F(A,B,C,D) = \prod(1,5,6,7,9,11,15).D(5,7,10,12)$
e. $F(D,C,B,A) = \sum(0,1,4,6,10,14) + d(5,7,8,9,11,12,15)$
f. $F(E,D,C,B,A) = \sum m(1,3,10,14,21,26,28,30) + d(5,12,17,29)$
g. $F(A,B,C,D) = \prod M(0,2,3,4,7,8)$